

SEQUENCE LISTING

<110> Falco, Carl
Famodu, Layo O.

<120> Tetrahydrofolate Metabolism Enzymes

<130> BB-1179

<140>

<141>

<150> 60/092,869

<151> July 15, 1998

<160> 8

<170> Microsoft Office 97

<210> 1

<211> 542

<212> DNA

<213> Zea mays

<220>

<221> unsure

<222> (363)

<400> 1

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acaaacatgc cagtagagaa gattgaccat gccttggaaa ccatcaaata caatgggatt 360
canaatgttt tggccctcag aggggattct ccacatgggc aagacaaatt tgtgcaagtt 420
gaaggcggat ttgcttgtgc tcttgatttg gtgacacata ttatagccaa gtacgggtgaa 480
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<211> 164

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<213> Zea mays

<220>

<221> UNSURE

<222> (105)

<400> 2

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      20             25             30
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Asn Leu Phe Glu Arg Met Asp Arg Met Val Ala His Gly Pro Ser Phe
      35             40             45
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Cys Asp Ile Thr Trp Gly Ala Gly Gly Ser Thr Ala Asp Leu Thr Leu
 50 55 60
 Glu Ile Ala Asn Arg Met Gln Asn Met Val Cys Val Glu Thr Met Met
 65 70 75 80
 His Leu Thr Cys Thr Asn Met Pro Val Glu Lys Ile Asp His Ala Leu
 85 90 95
 Glu Thr Ile Lys Ser Asn Gly Ile Xaa Asn Val Leu Ala Leu Arg Gly
 100 105 110
 Asp Ser Pro His Gly Gln Asp Lys Phe Val Gln Val Glu Gly Gly Phe
 115 120 125
 Ala Cys Ala Leu Asp Leu Val Thr His Ile Ile Ala Lys Tyr Gly Glu
 130 135 140
 Leu Phe Trp His Thr Val Thr Gly Tyr Gln Lys His Thr Leu Ser Asp
 145 150 155 160
 Thr Cys Glu Gly

<210> 3
 <211> 591
 <212> DNA
 <213> Oryza sativa

<220>
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 caagactgag gatggggtgg acaatctgtt tgagaggatg gaccgcatgg tgggtgcacaa 180
 cccctcgttt tgcgacatca cttgggggtgc tggagggaca acggctgatc ttacattgga 240
 aattgccaac aagatgcaga acattgtctg tgtggagacc atgatgcacc tcacctgcac 300
 caacatgcct gttgagaaga ttgacctgc tctccacacc atcaagtcca atggcctcca 360

aaatgtgctt gcacttcgag gtgatccacc gcatgggtcag gacaaattcg tccagtcgaa 420
 ggcggtttcc tgtgcacgcg acttggtgca acatatcaga ctaaatatgg tgacacttgg 480
 ataagtcctg gtatcagagc acaccgatg tatagaatga tggttggcac acagnggtac 540
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<210> 4
 <211> 408
 <212> PRT
 <213> Oryza sativa

<400> 4
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 1 5 10 15
 Lys Phe Val Asn Asp Cys Arg Gln Ile Gly Ile Thr Cys Pro Ile Val
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 Pro Gly Ile Met Pro Ile Asn Asn Tyr Lys Gly Phe Ile Arg Met Thr
 35 40 45
 Gly Phe Cys Lys Thr Lys Ile Pro Ala Asp Ile Met Ala Ala Leu Glu
 50 55 60
 Pro Ile Lys Asp Asn Glu Glu Ala Val Lys Ala Tyr Gly Ile His Leu
 65 70 75 80
 Gly Thr Glu Met Cys Lys Lys Ile Leu Ala His Gly Ile Lys Thr Leu
 85 90 95
 His Leu Tyr Thr Leu Asn Met Glu Lys Ser Ala Leu Ala Ile Leu Met
 100 105 110
 Asn Leu Gly Leu Ile Glu Glu Ser Lys Val Ser Arg Ser Leu Pro Trp
 115 120 125
 Arg Arg Pro Ala Asn Val Phe Arg Val Lys Glu Asp Val Arg Pro Ile
 130 135 140
 Phe Trp Ala Asn Arg Pro Lys Ser Tyr Ile Ser Arg Thr Ile Gly Trp
 145 150 155 160
 Asp Gln Tyr Pro His Gly Arg Trp Gly Asp Ser Cys Asn Pro Ser Tyr
 165 170 175
 Gly Ala Leu Ser Asp Tyr Gln Phe Met Arg Pro Arg Ala Arg Asp Lys
 180 185 190
 Lys Leu Val Glu Glu Trp Ala Val Pro Leu Lys Ser Val Glu Asp Ile
 195 200 205
 Tyr Glu Arg Phe Arg Leu Tyr Cys Leu Gly Lys Leu Arg Ser Asn Pro
 210 215 220
 Trp Ser Glu Leu Asp Gly Leu Gln Pro Glu Thr Lys Ile Ile Asn Glu
 225 230 235 240
 Gln Leu Glu Lys Ile Asn Thr Lys Gly Phe Leu Thr Ile Asn Ser Gln
 245 250 255

Pro Ala Val Asn Gly Glu Lys Ser Asp Ser Pro Thr Val Gly Trp Gly
 260 265 270
 Gly Pro Gly Gly Tyr Val Tyr Gln Lys Ala Tyr Val Glu Phe Phe Cys
 275 280 285
 Ser Lys Glu Lys Leu Asp Ala Leu Val Asp Lys Cys Lys Asp Arg Thr
 290 295 300
 Ser Leu Thr Tyr Met Ala Val Asn Lys Asp Gly Ser Trp Lys Ser Asn
 305 310 315 320
 Val Gly Gln Thr Asp Val Asn Ala Val Thr Trp Gly Val Phe Pro Ala
 325 330 335
 Lys Glu Ile Ile Gln Pro Thr Ile Val Asp Pro Val Ser Phe Asn Val
 340 345 350
 Trp Lys Asp Glu Ala Phe Glu Ile Trp Ser Arg Gly Trp Ala Ser Leu
 355 360 365
 Tyr Pro Glu Asp Glu Ala Ser Arg Lys Leu Val Glu Glu Val Gly Gly
 370 375 380
 Ser His Phe Leu Val Ser Leu Val Asp Asn Asp Tyr Ile Asn Gly Asp
 385 390 395 400
 Leu Phe Ala Val Phe Ala Asp Phe
 405

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 <211> 558
 <212> DNA
 <213> Glycine max

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 gccaaattgg aataacgtgt cctattgtac ctggaattat gccattaat aattacaagg 120
 gctttatccg catgactggg ttttgcaaaa caaagatacc agctgacatt atggctgctt 180
 tagagcctat caaggacaat gaagaagctg tcaaggctta tggaattcac ctgggaactg 240
 aaatgtgcaa aaagatttta gctcatggaa ttaagacatt gcattcttat acactaaata 300
 tggagaaatc tgcattggca atactaatga accttggcct aattgaagag tccaaagtgt 360
 ctaggctcctt accttggaga cgccctgcaa atgttttccg tgttaaagaa gatgtccgtc 420
 caatcttttg ggcaaatcga ccaaaaagct acatatcaag gaccatagga tgggatcaat 480
 acccacatgg gcgttggggt gattcctgta atccatcata tgggtgcatta tctgattatc 540
 agttcatgcg gccacgtg 558

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 <211> 408
 <212> PRT
 <213> Glycine max

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 1 5 10 15
 Lys Phe Val Asn Asp Cys Arg Gln Ile Gly Ile Thr Cys Pro Ile Val
 20 25 30

Pro Gly Ile Met Pro Ile Asn Asn Tyr Lys Gly Phe Ile Arg Met Thr
 35 40 45
 Gly Phe Cys Lys Thr Lys Ile Pro Ala Asp Ile Met Ala Ala Leu Glu
 50 55 60
 Pro Ile Lys Asp Asn Glu Glu Ala Val Lys Ala Tyr Gly Ile His Leu
 65 70 75 80
 Gly Thr Glu Met Cys Lys Lys Ile Leu Ala His Gly Ile Lys Thr Leu
 85 90 95
 His Leu Tyr Thr Leu Asn Met Glu Lys Ser Ala Leu Ala Ile Leu Met
 100 105 110
 Asn Leu Gly Leu Ile Glu Glu Ser Lys Val Ser Arg Ser Leu Pro Trp
 115 120 125
 Arg Arg Pro Ala Asn Val Phe Arg Val Lys Glu Asp Val Arg Pro Ile
 130 135 140
 Phe Trp Ala Asn Arg Pro Lys Ser Tyr Ile Ser Arg Thr Ile Gly Trp
 145 150 155 160
 Asp Gln Tyr Pro His Gly Arg Trp Gly Asp Ser Cys Asn Pro Ser Tyr
 165 170 175
 Gly Ala Leu Ser Asp Tyr Gln Phe Met Arg Pro Arg Ala Arg Asp Lys
 180 185 190
 Lys Leu Val Glu Glu Trp Ala Val Pro Leu Lys Ser Val Glu Asp Ile
 195 200 205
 Tyr Glu Arg Phe Arg Leu Tyr Cys Leu Gly Lys Leu Arg Ser Asn Pro
 210 215 220
 Trp Ser Glu Leu Asp Gly Leu Gln Pro Glu Thr Lys Ile Ile Asn Glu
 225 230 235 240
 Gln Leu Glu Lys Ile Asn Thr Lys Gly Phe Leu Thr Ile Asn Ser Gln
 245 250 255
 Pro Ala Val Asn Gly Glu Lys Ser Asp Ser Pro Thr Val Gly Trp Gly
 260 265 270
 Gly Pro Gly Gly Tyr Val Tyr Gln Lys Ala Tyr Val Glu Phe Phe Cys
 275 280 285
 Ser Lys Glu Lys Leu Asp Ala Leu Val Asp Lys Cys Lys Asp Arg Thr
 290 295 300
 Ser Leu Thr Tyr Met Ala Val Asn Lys Asp Gly Ser Trp Lys Ser Asn
 305 310 315 320
 Val Gly Gln Thr Asp Val Asn Ala Val Thr Trp Gly Val Phe Pro Ala
 325 330 335
 Lys Glu Ile Ile Gln Pro Thr Ile Val Asp Pro Val Ser Phe Asn Val
 340 345 350

Trp Lys Asp Glu Ala Phe Glu Ile Trp Ser Arg Gly Trp Ala Ser Leu
 355 360 365

Tyr Pro Glu Asp Glu Ala Ser Arg Lys Leu Val Glu Glu Val Gly Gly
 370 375 380

Ser His Phe Leu Val Ser Leu Val Asp Asn Asp Tyr Ile Asn Gly Asp
 385 390 395 400

Leu Phe Ala Val Phe Ala Asp Phe
 405

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 <212> DNA
 <213> Triticum aestivum

<220>
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 <222> (25)

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 atcttgctta cttgaagaga aaggttgatg ctggtgctga cggtataatc acccancctt 180
 tctatgatac cgatatcttt ctcaagtttg tgaacgactg ccgtcagatt ggtataacct 240
 gccctatcgt tcctggcata atgccaataa ataactacaa aggatttggt cgcataactg 300
 gattctgcaa aactaaaatt ccacctgaga ttactgctgc cttgggntcc tactaaagac 360

aatgaggagg ntgtgaaaag catatgggat ccaccctggt actgaagatg ttcaaaaaaa 420
 attttnggct agtgggataa anacnttgca c 451

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 <213> Triticum aestivum

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 1 5 10 15

Gly Tyr Pro Glu Ala His Pro Glu Xaa Xaa Ala Tyr Xaa Lys Xaa Leu
 20 25 30

Ala Tyr Leu Lys Arg Lys Val Asp Ala Gly Ala Asp Val Ile Ile Thr
 35 40 45

Xaa Leu Phe Tyr Asp Thr Asp Ile Phe Leu Lys Phe Val Asn Asp Cys
 50 55 60

Arg Gln Ile Gly Ile Thr Cys Pro Ile Val Pro Gly Ile Met Pro Ile
 65 70 75 80

Asn Asn Tyr Lys Gly Phe Val Arg Met Thr Gly Phe Cys Lys Thr Lys
 85 90 95

Ile Pro Pro Glu Ile
 100